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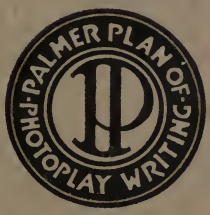
Camera Knowledge for The Photoplaywright

By HUGH C. McCLUNG



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Camera Knowledge
for
The Photoplaywright

By
HUGH C. MCCLUNG

One of a Series of Lectures Especially Prepared for Student-Members of The Palmer Plan

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PALMER PHOTOPLAY CORPORATION
DEPARTMENT OF EDUCATION
LOS ANGELES, CALIFORNIA

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HUGH C. McCLUNG

HUGH C. McCLUNG *is one of the more thoughtful and progressive class of cinematographers. In early life an enthusiastic amateur photographer, Mr. McClung became a newspaper expert with the camera and finally took up motion photography, starting with the old Melies Company, one of the pioneer organizations in the making of motion pictures. Mr. McClung later became identified with the St. Louis Motion Picture Company, Fine Arts, William Fox, Triangle, Douglas Fairbanks, Famous Players-Lasky, D. N. Schwab Productions, Inc., and other well-known companies. He photographed "The Wonderful Schools of Los Angeles" and exhibited the film at the Panama Pacific Exposition at San Francisco, winning first prize. Mr. McClung has not been satisfied merely to accupy himself with the daily routine of turning the crank of a motion picture camera, but has experimented and studied, and several important discoveries and inventions are credited to him as a result.*

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1. Intimate knowledge of the camera is not essential to the progress and success of the photoplaywright as far as the actual craft of evolving situations, plots and completed stories is concerned, yet every screen writer should be sufficiently familiar with the work of the camera man to talk and think intelligently on the subject.

2. The camera is at one and the same time a mechanical and an artistic utility; it is to the director of photoplays what the brushes, paint and palette are to the painter. In the Handbook, Mr. Palmer has explained that the photoplay is screen drama. In the case of the speaking stage, the audience witnesses the action of the play as it is presented by the living actors. While a play is running in one city, the rest of the world must needs wait. The photoplay is a product of modernity, and unlimited duplication of positive prints derived from the original negative permits the simultaneous presentation of a screen drama in innumerable places. The camera and the cinematographer form the unit that makes it possible to record and duplicate the dramatic or comedic action that is embodied in a screen production.

Camera and Printing Press.

3. Looking upon the camera purely as a mechanical device, it may be regarded in relation to the production of photoplays much as the printing press is in the publication of books and magazines. The novelist need never even see a printing press nor know anything of its mechanical construction. After shaping the story in his mind he may dictate it to a stenographer, and when the final draft is complete, give it no further thought until the finished volume is placed in his hands.

4. Following this line of reasoning, the photoplaywright need not be concerned with his story from the time he submits the manuscript until he sees the screen presentation. The cases are not quite parallel, however, The novelist tells his story in words and phrases, and the printing press is merely a means of duplication, for the finished volume still consists of words and phrases. The photoplaywright sets his story down in words, descriptive of action, and the camera translates the action into *pictures.* It is obvious, therefore, that the photoplaywright must constantly *think in pictures.* And for this reason, familiarity with the camera is exceedingly useful.

5. It is an excellent idea for each sincere student of photoplaywriting to possess a camera, even though it be of the smallest pocket variety. Its use will materially assist in developing the habit of visualization, which is indispensable to the screen writer.

6. In his lecture dealing with picture values from an artist's viewpoint, Mr. Wagner deftly dealt with the limitations and possibilities of motion photography, and I shall confine myself to intimate details of the cinematographer's daily work.

Importance of the Camera Man.

7. Many who are not acquainted with studio details seem to assume that the camera man needs only to be equipped with the ability to focus and turn the little crank that winds the film past the lens. It is true that these requirements have sufficed many times in the past, but the photoplay of today and tomorrow must be considered as an artistic entity, and the camera man must be collaborator with the director in translating the original ideas of the author to the screen. That the producer has fully realized this fact is proven by the increasing custom of giving the cinematographer full screen credit for his work.

8. As an example of the lack of information on the part of the laity regarding the requirements of a camera man, may I be excused for relating a personal incident?

Not long ago we were engaged in making a series of scenes in an interior on an open stage and our work was followed with interest by several spectators. When we had finished one sequence and were waiting for a change of costume, one of the spectators stepped over in front of me. The following conversation ensued:

"What do they pay in your line of work?"

"Oh, from $75 to $300 a week."

"You mean per month."

"No, I mean per week."

"Gee, I'd like to get a job here taking pictures. Any chance?"

"What experience have you had?"

"Oh, lots."

"On the camera?"

"N—n—no."

"Been an assistant to a camera man?"

"N—n—no."

"Have you had any laboratory experience?"

"I—I—can't say I have."

"Have you a kodak and do you do your own work?"

"Not yet. Do you have to know all these things just to stand there and turn that handle?"

9. Had time permitted I fear I should have related to him the famous story of Whistler and a similar pest who, on asking the great painter with what he mixed his paints to get such beautiful results, was answered brusquely, "With brains!"

Some Interesting Details.

10. In viewing a picture replete with thrills, you have swayed to one side to avoid an automobile or given an exclamation at the near approach of an express train rushing head on, or you have "ducked" to escape the aeroplane which apparently swept right out into the audience. During all this you were sitting in a comfortable chair—where do you think the camera man was? True, this is the spice and not the regular diet of a cinematographer's

life, but, notwithstanding, there is hardly a day that passes in our lives in which there is not more or less risk.

11. What is the first requisite of a good camera man? Technical ability, for without this he could not accomplish anything. It seems hardly necessary to speak of concentration, for in this business, more than in almost any other, it is a most important qualification. The lack of it sometimes leads to amusing incidents.

12. Such a one occurred during the filming of the blowing up of a cabin. A big charge of powder had been placed and beams run in every direction, so that when the charge was exploded it would completely demolish the house. Two cameras were used to photograph this to forestall any failure. One was placed on a large covered truck about 75 feet from the cabin, the other on the ground about 35 feet away, the latter working for a closer view. The *Graflex man was on hand, too, and when the word was given, the cameras started, then the signal was given to the powder-monkey, who exerted all his strength with an old-fashioned friction battery, but to no avail, owing, no doubt, to faulty contact. After six fruitless attempts, the seventh was conspicuously successful, but—the suspense had affected everybody's nerves to such an extent that the Graflex man, who had withdrawn his slides the first six times, failed to do so on the seventh, and so lost the shot, while the camera man on the truck, who had been wrought up to a painful pitch by the suspense, *stopped* his camera as the explosion occurred.

13. Are technical skill and concentration all the qualities that are needful? No; the camera man must have speed, judgment, diplomacy, patience, ingenuity, resourcefulness and courage. This seems a formidable list, but let us take each quality by itself and see if the following incidents will not bear out my assertion.

Speed.

14. The greatest necessity for speed is illustrated in the gathering of events of importance for the pictorial

*Operator of a Graflex, or speed camera, who makes "still" pictures of important scenes.

news weeklies—fires, accidents, etc., but speed is equally as necessary in dramatic work.

15. A great dramatic star who had been before the camera for years once said to a friend, indicating a very capable and efficient cinematographer who had only recently joined his forces: "There is the best camera man I have ever met in the business. Do you know why? Because, when we have finally rehearsed a dramatic scene and the director says, Go, *we go!* Naturally, we do better work while the spell of the emotion is on us, but if we are compelled to wait until the camera man gets his focus, or attends to a dozen other things which should have been done during rehearsal, the spell is broken and we go on the scene cold. We went down town yesterday for an important street scene, and that fellow casually looked over his set-up. While the director was quietly giving us instructions as to the scene, so as not to attract attention, the camera man had set up his camera in a little alley, hidden by an automobile, focused it, set his exposure, and, when the director gave the signal, picked up his outfit, came rushing out to the corner, set up and began operating at once, enabling us to get this scene before any one on the street realized what we were doing. That's what I call speed!"

16. Instances of speed, although along different lines, occurred at a world's championship prize fight several years ago. The film had been shipped on ahead, but was delayed in transit, arriving just 15 minutes before the beginning of the fight.

17. The quarters were several miles from the station, and, with three cameras set up and only one magazine loaded with all the film we had (400 feet), things looked desperate. They looked even more so when the referee was giving the fighters their final instructions. The gong sounded and the fight began, with still no sign of the racing car which had been sent to receive the film as the train rolled in.

18. Round one ended. One hundred and eighty feet gone! Round two began and the tension had reached

breaking point, when the racing car rolled up in a cloud of dust. The boxes of film were literally thrown to the second camera man, who dived into the tent darkroom, where the empty magazines had been opened ready for reloading.

19. Round two ended. Three hundred and sixty feet gone! This finished camera number one. The second camera man rushed madly up the steps of the camera platform with a loaded magazine, and by the time the gong rang for round three camera number two was in operation—and the day was saved.

Judgment.

20. Hand in hand with the quality of speed must go good judgment, for often the question of life or death hangs on the turn of a second. For the purpose of getting a scene of a passenger train a camera man set up on the railroad track, after ascertaining that the local would pass that point in twenty minutes. Unknown to him, the local was delayed and was sidetracked several stations above to let the limited through. At the rumble of the approaching train he started operating his camera. As the train swung into view around the curve, he got a thrilling scene of the onrushing train, sidestepping it with his outfit just in time. Had he depended on the information that this was the local, instead of using his good judgment as to the speed of the train, he would have lost his life. Equally exact calculations must be made in the cases of bucking horses, racing automobiles and aeroplanes in action.

Diplomacy.

21. An incident in a somewhat lighter vein will illustrate the value of diplomacy to the cinematographer. An educational institution wished a film made illustrating the entire scope of its activities. A certain amount of money had been set aside and each department was alotted equal footage. When the picture was near completion a difficulty was encountered in the person of a determined lady who insisted that not a single detail of her department should be left out. In figuring out footage for what she

wanted taken, it amounted to over three-fourths of the entire production, and was, of course, out of the question.

22. After trying to reason with her, and explaining the matter fully, the director appealed to the principal. No amount of argument would convince her, and the principal ended by reminding her that no more money was available for all this extra footage. Both director and principal walked away in disgust, leaving the camera man to be the goat. He smilingly asked her to arrange the three things which, in his mind, best illustrated the work of her department. These were properly photographed, then a new magazine was placed on the camera *without the film being threaded up*. After getting, as she supposed, all she had asked for (the footage dial showing 2,700 feet when her entire allotment was 300), she was profuse in her thanks, and what she said about the others I will refrain from mentioning.

Patience.

"Patience is a virtue,
Catch it if you can;
It is seldom in a woman,
And never in a man."

23. To disprove the assertion contained in the above-quoted "pome" it is only necessary to mention the many occasions on which the camera man is required to handle children and animals. The director usually delegates this character of work to him, and it sometimes takes hours of patient work and waiting to secure a three-foot scene which is absolutely essential to the story.

24. After a trying day, a library set was finished at 10:30 that evening, and, as the order to dismiss was given, the director said to the camera man, "This set is finished, there will be only one other scene needed here—that of the little dog barking. Get it tonight, it will take you only a few minutes, and then we'll be through with the set."

25. The dog in question was a Japanese poodle, whose lack of gray matter was appalling. Property man, grips, electrician, assistant and camera man tried every

plan they could think of to induce this mutt to bark. After a time the bunch warmed to the work, and every conceivable sound was tried, but to no purpose. One man even brought in a stray dog, another a cat he had rounded up, and, last of all, one of the property men produced something on wheels, all covered up. He brought it up very close to the poodle, with a grand flourish and a wild roar pulled the covering off, exposing a stuffed lion. The poodle's eyes nearly came out of his head—but nary a bark.

26. About 3 a. m., some one suggested getting a piece of meat—but where? A hasty search revealed a small piece left in the electrician's lunch box, and, after dangling it in front of the poodle, it was finally rubbed on his nose with the result that he opened his mouth. The camera man hastened to get it; everybody agreed that it looked just like a bark and decided that their day's work was finished. All were sworn to secrecy until it was viewed on the screen. The director, after seeing it run, pronounced it just what he wanted, and it was not until some time afterward that he was told the truth about it.

27. Then there is the stop-motion work, where each picture is taken separately with a single turn of the crank and then the article or subject moved to the next position for the following picture, and so on down the line. When you consider that from 12,000 to 13,000 pictures are required to complete a one-reel subject, you will get some idea of what patience means in a cinematographer's life.

Ingenuity.

28. Several years ago, when equipment was not as easy to get as it is now, one company had several releases to meet, with only one camera in their equipment. Every effort was made to purchase others, but without results. A well-known camera man, in applying to this firm for a position, was told that if he could supply his own camera, or tell them where one could be purchased, they would take him on at once. When the discovery was made that

no camera was to be had, this camera man built a box in in which he placed an old projection machine head for the mechanism, and mounting his own lens in this home-made contraption, he photographed two very beautiful pictures.

29. Another example: While on location, another camera man was called upon to photograph the closing scenes of the picture with a beautiful sunset effect as a background. With no ray filter available, he improvised one by removing the amber glass from a pair of automobile goggles, and the results obtained left nothing to be desired.

Resourcefulness.

30. What does it mean to be resourceful? It means to be full of resources, expedients or contrivances; clever in finding out resources. It means searching the innermost recesses of your mind to find a way out. During the filming of a feature picture, in which a number of scenes were laid on a Chinese junk (which had to be built at great expense), an accident occurred which came near spoiling the entire production. After securing all the scenes on the deck of the junk, the camera man took up a location on the breakwater to photograph the sinking of the vessel. As had been planned, the vessel was to be scuttled, entrapping a number of Chinese who were supposedly locked in the hold. Contrary to all plans of the boat builders, she didn't scuttle, but turned over on her side, exposing the superstructure or shell, but just as she began to turn the center portion of the false bottom opened up and the scene was absolutely a total failure.

31. To have retaken this one scene alone would have cost thousands of dollars, and the gloom that settled on the crowd was repeatedly punctured by the sulphuric explosions of the director. On the return home the camera man, who had been cudgeling his brains for a way out, made the suggestion that when the interior of the junk was to be made (which had to be done at the studio in an enormous tank of water), the villain, instead of boring the holes to scuttle the ship, be made to place dynamite

underneath the floor, as this explosive blows down instead of up, and the cut could be made on the junk just as the false bottom was shown leaving the ship. By the slow, relieved smile that overspread the director's face it was easy to see that the suggestion had saved the situation, and his words of appreciation were, "By ginger, old top, you're almost human!"

Courage.

32. How would you like to put on a life belt and be lowered down the side of a cliff to get a scene? Or with tripod and camera lashed on the hood of an automobile driven at 60 miles an hour by an inexperienced driver? Or, with hardly foot-room in which to balance yourself, climb around a sky-scraper for special scenes? Or ride the rods under a box car, photographing the "tramp" on the brakebeam with the train doing 40 miles an hour? Or be strapped in an aeroplane with the pilot executing every fancy stunt he knows? These, and many other risks, are among the things a camera man may be called upon any day to do.

33. Granted, now, that your camera man has technical skill, concentration, speed, judgment, diplomacy, patience, ingenuity, resourcefulness, and courage. Are these all the qualities he needs? No, and this last requirement of all is one which is beyond mere knowledge and skill. It is the power to give expression in his work to the imagination and emotion that is in him—it is a creative faculty which is the spontaneous outpouring of his inner, spiritual self. This is what it means to be an artist.

34. You may take exception to the word artist used in connection with cinematography. I say emphatically that this is the right term to use. The painter with his canvas, brushes and oils, creates a picture, using every color of the spectrum to heighten the effect, the outcome being great or mediocre, according to the soul of the artist. The sculptor with his tools, chiseling out the block of marble, creates his figure or figures in graceful proportions and poses, giving us a finished result that is a lasting joy to lovers of beauty.

35. For centuries multitudes have gathered about the works of these masters, uplifted and inspired. We of today are modeling with lights and shadows, giving you not only beautiful composition, perspective, atmosphere and settings, but we make each picture a living, breathing example of the cinematographer's art.

Debts to Photography.

36. Hardly a branch of art or science but owes a debt to photography. Drawing and painting have been greatly influenced by it, astronomy has been enriched by it, the meteorologist, the physiologist, the pathologist, the scholar, the traveler, not to mention the Army and Navy, find it indispensable. Every day its importance as a spreader of valuable knowledge is emphasized and as a means of entertainment it has no rival, as can be proved by the unexampled growth of moving picture theaters throughout the country.

37. The study of the history of photography, from its very beginning to the present time, is one of such great interest that it should be the pleasure of every one with a liking for the subject, be he amateur, professional portraitist or cinematographer, to trace its development through the last four or five centuries to the point where it has become one of the greatest factors in modern education.

38. Not alone should the study be taken up for the pleasure of learning of each successive step in the investigations of those earlier workers, but for the inspiration which thrills one in reading of the patient plodding, day after day, of those earnest men who were constantly experimenting, faithful always to the one great work through deep discouragement and apparent failure—and then *success.* Surely the old adage, "If you don't at first succeed, try, try again," never had a more apt illustration.

39. Let us touch here on a few of the most important discoveries and mention some of the names of those to whom the whole world owes it gratitude. The idea which led to the development of the camera was known at the beginning of the fourteenth century. This was that it was possible on a sunny day to project the image of outside

objects through a small hole in to a darkened room. This idea was used as the basis for the *camera obscura* (Latin, dark chamber), which was a box from which all light was excluded except that entering though a small hole in the front, an inverted image of the object appearing on a movable semi-transparent screen.

Origin of Camera Obscura.

40. The origin of the *camera obscura* has not been fixed with any certainty, some attributing it to Leonardo da Vinci, others to Baptista Porta. What seems probable is that the principles governing this instrument, which had been understood for more than a century, were applied to its construction by Da Vinci in the sixteenth century, and about 1558 Porta effected a considerable improvement on its orginal form.

41. It was found that by placing a piece of glass in the hole in front a sharper and more brilliant image was produced, though still inverted. To show the image right side up, an inclined mirror was built into the box. This simple mirror attachment was developed in more recent years into the Graflex camera, which is indispensable to press photography. This same principle is used in the periscope, an instrument the great importance of which is well known today. The first simple contrivance was used solely by painters in their work, and by placing a thin piece of paper over the screen it was easy to trace the outlines of the picture. Most people, however, regarded the *camera obscura* as a mere toy.

42. Nothing of any great value to photography was discovered for nearly three hundred years. Then, in the early part of the nineteenth century, Niepce, a Frenchman, carried on extensive experiments with the object of finding a sensitive preparation which would enable him to catch the picture and hold it. He used a solution of asphalt, or the bitumen of Judea, poured on a metallic plate, and succeeded in getting some imperfect results, but could not make them permanent.

43. Daguerre, also a Frenchman and a scene painter in Paris, had become interested in trying to fix the image of the *camera obscura* in order to make use of it in his profession. He became so enthusiastic in his search that he spent nearly all his time in his laboratory, and his wife asked herself if her husband were going mad. Through an optician in Paris who was aware of Daguerre's experiments, the latter and Niepce were brought together and a partnership was formed which continued until Niepce's death in 1833.

44. Daguerre persisted in his search, and about five years later made the discovery that by sensitizing a silver plate with iodine and exposing it for hours he could get a faint sort of image of bright objects. Being dissatisfied one day with the result of too short an exposure, he consigned the silver plate to his closet to be cleaned the next day and prepared for another exposure. Next morning he found a perfect picture upon the silver plate! We can imagine his astonishment and delight. At last, when success had seemed so far away, the magic thing had come to pass. He investigated very carefully and found that the development had been effected by the vapor of mercury, a small dish of which had been left uncovered in the closet.

45. Soon after, that is, in January, 1839, Daguerre's great discovery was announced. In that day, as in this, and, in fact, all other times, there were people who ridiculed and scoffed at the new idea, saying that such a thing was impossible, but Daguerre made good his claims and the French government pensioned him, with the proviso that this discovery should be given to the world.

46. In England, Fox Talbot had been conducting experiments with the object of capturing the image in the *camera obscura.* He was greatly disappointed at not being the first to give this new art to the world; but let us not forget that he succeeded in reaching a point not attained by Daguerre, for the latter's efforts had produced a picture, with the light and shade correctly rendered, but

which could not be copied. Fox Talbot's Calotype process produced for the first time negatives instead of positives, from which any number of copies could be made. This came to be called talbotype, in honor of the inventor.

Chemistry of Photography

47. The chemistry of photography had not kept pace with the mechanical part. It had been found that the image could be made permanent after development by washing the plates in a solution of common salt. Sir John Herschel, the great astronomer, suggested that hyposulphite of soda was a better substance than salt, and so it proved. No better "fixer" has been discovered and "hypo" is in common use at the present time.

48. Something unexpected "happened" to Talbot. He found, when one of his exposures fell into a solution of gallic acid, that the detail was very much improved. Thus, step by step, more and more beautiful effects were being secured. Special photographic lenses, greatly reducing the time of exposure, were now introduced. Niepce's nephew was the first to use glass plates as a foundation for the sensitive coating; Frederick Scott Archer, a sculptor of London, sponsored the wet collodion process; Dr. Taupenot, in France, gave to the world the first dry plates, and so on through various steps to the achievement of instantaneous photography and the sensitized film. We take all these things as a matter of course; how little thought we give to the romance of the thing!

49. Let us go back to the "accidental" discoveries of Daguerre and Fox Talbot. Do you think these were accidents? Indeed, no. There is an Oriental saying something like this: "When the pupil is ready, the teacher appears." The minds of these men, filled to overflowing with the joy of giving something of benefit to the world, and aflame with enthusiasm in their work, acted as powerful magnets and attracted to themselves the knowledge they needed, even though that knowledge *seemed* to come as an accident.

50. The next in the development of photography would seem to be the color work. The day is not far distant when you will see *real* natural color photography. By this I do not mean the horrible examples which have been shown in recent years under this designation. The process has reached a stage where the result is no longer in doubt.

51. One of the greatest apparent obstacles to the success of this extremely important advance has been the lack of speed in the emulsion of both film and plates. It should be remembered that this work in which the exposure is made through color filters, requires a much longer time than when exposing without a filter, but it remained for the man who has done more than any other one man to further the advancement of photography in the United States to overcome this great difficulty and he is now preparing stock with an emulsion which works from 20 to 30 times as fast as the ordinary stock today. With the panchromatic qualities in this film, both negative and positive, we will have natural color photography the equal of which has never been seen before.

52. Did you ever stop to consider what photography really is? Your answer, I know, will be "Yes" and in all good faith, but do you realize that there are some photographers who, if they were asked this question, would no doubt give the same answer as you do, and that is that photography is the image of the object impressed upon the sensitive emulsion of the photographic film or plate, whereas in reality it is the reflected light from that object which makes the picture. That is why dark green, red, orange, yellow, etc., photograph black, for they absorb so much of the light that there is little or none to reflect. For example, if an object is placed in a room that is totally dark, it will be impossible for the eye to distinguish its form, but throw a light on this same object from behind and you will get the outline but no detail. Bring your

light around to one side and you get the reflected light of part of that object, giving you proportionate detail. By bringing the light farther around in front, a full impression is gained by the reflection of light.

An Amusing Incident.

53. An amusing incident occurred on one of the writer's trips, emphasizing the fact that it is light reflected from the object which we see, and not the object itself. While seated on the hotel veranda at D'Angkor, Cambodia, one evening, a Hindu interpreter, as black as the ace of spades, who always wore a white duck suit, straw hat and white canvas shoes, presented a weird appearance as he walked across the lawn, about 60 feet away. All that could be seen was the white duck suit, white shoes and a hat raised about twelve inches above the suit. His hands and face were not perceptible. To the superstitious or nervous observer he presented a spectral appearance and the consternation he caused to the timid was the source of much amusement to the others. Thus is exploded the old saying, "Seeing is believing."

54. Have you ever speculated on the reason actors and actresses put on make-up? No! It is because some skins absorb so much of the light that the little left that is reflected causes them to photograph very dark, while others reflect all of the light and photograph as white as chalk. The first mentioned use a fairly light make-up unless they are playing character parts, such as Indian, Mexican, Chinaman, etc., while the others use a darker make-up than their flesh.

55. A great mistake that is constantly made, I am sorry to say, by the "female of the species" is the wrong use of the carmine lip stick and the powder puff, the most awful things we have to contend with in getting correct flesh values. I will admit that some lips require a slight application of lip rouge, but it is a crime against art that so much is applied as to make the mouth look like a black slit in the face.

56. I have never yet in all my experience had the pleasure of seeing an ingenue or a leading woman come into a scene without first using (or abusing) the powder puff. Powder, to be properly applied, is only meant to soften down the shiny appearance that the grease paint gives, and by constant application the flesh tones are lost and resultant effect on the screen is a skin of dull, lifeless appearance.

57. The correct method of applying powder, from the cameraman's standpoint, is to use just enough to overcome the shine of the grease paint, then use a soft brush to remove the surplus, and it is almost impossible, granting a correct exposure, to get anything but beautiful results. This I know from actual experience for I have made experiments along these lines.

58. In days gone by, so many amateur writers have depended entirely too much upon the mechanical effects possible with the camera to "get over" what should have been made clear by better construction. To such I would say, Don't be a slacker and depend on us to put over something you have only partially completed yourself.

59. The three greatest essentials in successful picture making are, first, *the story;* second, the direction, and third, the photography. It is as true today as ever before that you cannot get something for nothing and I feel safe in saying that you cannot write too good a story, for it will bring just what it is actually worth, be it a hundred dollars or a hundred thousand. (The last named sum is the reported price recently paid for a screen story.)

60. Perhaps a few words about the inner workings of the laboratory may not come amiss. The negative film which has been exposed in the camera is turned in each evening to the laboratory after having been removed from the mazazines, wrapped in black paper and transferred to cans. These cans are sealed with tape and a label pasted on, giving such information as will enable the developer

to get best results, markings reading somewhat as follows: Exterior—beach scene: Exterior—aeroplane; Exterior—desert, long range, develop for scenic effect; Exterior—camp fire, night scene, develop for faces only; Interior—ball room, develop for full set; Interior—bedroom, light effect, develop for faces only, etc.

61. The cans are collected by the negative developer's assistants, taken into negative room (which is, of course, dark), and the film wound on racks. These racks hold from 190 to 210 feet. They are then placed in the developing tanks. After development is complete, the racks are then transferred to the fixing bath and from that to the washing tank. The next step is the winding of the film on the large drying drums. After the process of drying is complete the film is taken off in cloth-lined carriers, re-wound from these in rolls, transferred to the polishing room, wound again on solid drums, face down, polished, re-wound in rolls, inspected, and turned over to the printing room.

62. Negatives are examined and timed according to density and sample prints made therefrom for what is termed "the daily run." This brief outline will give you an idea of the many delicate operations through which the film must pass before even the working print is seen. There is a feeling of great optimism prevading the ranks of the cinematographers. Wonderful strides have been made in the last few years for at last photography in the hands of artists is coming into its own.

Hugh C. McClung

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